

Appl. No. 09/227,518

REMARKS

Claims 63-65, 67-69, 71-76, 78-83 and 85-87 are pending. No new matter has been added by way of the above amendments. For instance, claims 63 and 74 have been amended to replace the recitation of "the liquid layer" with "a liquid layer". Additionally, claims 63, 64, 65, 74, 75 and 76 have been amended to reflect that the porous membrane is constructed of a non-absorbent material with pores of regular and defined diameter which traverse the membrane directly from the upper to the lower side as supported by claims 70 and 84 now cancelled. Additionally, claims 66 and 77 have been cancelled. Accordingly, no new matter has been added.

Additionally, no new issues have been raised which would require additional search and/or consideration on the part of the Examiner. Claims 63, 64 and 65 have been amended to include the subject matter of claim 70 and claims 74, 75 and 76 have been amended to include the subject matter of claim 84. Since both claims 70 and 84 were previously searched and considered, the inclusion of their subject matter into the independent claims does not present the Examiner with the burden of additional search and/or consideration. Also, minor antecedent issues were corrected in claims 63 and 74. Accordingly, no new issues have been raised.

Appl. No. 09/227,518

In the event that the present submission does not place the application into condition for allowance, entry thereof is requested as placing the application into better form for appeal.

In view of the following remarks Applicants respectfully request that the Examiner withdraw all rejections and allow the currently pending claims.

Election/Restriction

The Examiner has asserted that newly submitted claims 63-87 are directed to an invention which is independent or distinct from the invention originally claimed for the following reasons:

- I. Claims 63, 66-74, and 77-87 are drawn to screening method wherein an array of compounds are disposed on a support, i.e. solid, for contact with viable cells.
- II. Claims 64, 66-73, 75, and 77-87 are drawn to screening method wherein an array of compounds are disposed specifically on a porous membrane for contact with viable cells.
- III. Claims 65-73 and 76-87 are drawn to screening method wherein an array of compounds are contacted with viable cells grown on a porous membrane.

Applicants respectfully disagree with the Examiner. Applicants submit that the porous membrane, as defined in previous claim 70, links each of the independent claims. This membrane with pores of regular and defined diameter which traverse the membrane

Appl. No. 09/227,518

directly from the upper to the lower side has the same structure, the same mode of operation and the same effect in each of the independent claims. In Group I, the membrane guides the lateral spread when the compounds diffuse from the solid support to the cell layer. In Group II, the test compounds are applied directly on the porous membrane, but the effect and concept is substantially the same as in Group I. That is, the porous membrane guides the compounds to limit the lateral spread when coming in contact to the cell layer. In Group III, the cells are grown on the porous membrane whereby the compounds will fall into the pores, and the lateral spread will be limited. Thus, the election is traversed.

The Examiner is therefore requested to withdraw this restriction and consider each of the currently pending claims.

Issues under 35 U.S.C. § 112, second paragraph

The Examiner has rejected claims 63, 66-74 and 77-87 under 35 U.S.C. § 112, second paragraph for the reasons recited at pages 3-4 of the outstanding Office Action. Applicants respectfully traverse each of these rejections.

First, the Examiner asserts that in claim 63, step (c) lacks antecedent basis in reciting, "the liquid layer". Applicants traverse and submit that claim 63, step (c) has been amended to avoid this lack of antecedent support.

Appl. No. 09/227,518

Second, the Examiner asserts that claim 66 is vague and indefinite in reciting "the porous membrane limits lateral spread of the test compounds during diffusion", since it is allegedly unclear, as recited, how relative "porosity" is able to limit lateral support. Applicants traverse and submit that the subject matter of claim 70 has been inserted into claim 66. In particular, it is now defined that the porous membrane is constructed of a non-absorbent material with pores of regular and defined diameter which traverse the membrane directly from the upper to the lower side. Accordingly, it is now clear how the lateral spread of the test compounds is limited during diffusion.

Third, the Examiner asserts that in claim 74, step (c) there is insufficient antecedent basis for the phrase "the liquid layer". Applicants traverse and submit that claim 74, step (c) has been amended to avoid this lack of antecedent basis.

Fourth, the Examiner asserts that claim 77 is indefinite in reciting "the porous membrane limits lateral spread of the test compounds during diffusion". Applicants submit that claim 77 has been amended to recite the subject matter of claim 70. Accordingly, similar to the rejection of claim 66, this rejection is also moot.

In summary, Applicants respectfully submit that each of the presently pending claims defines subject matter which is fully

Appl. No. 09/227,518

definite within the metes and bounds of 35 U.S.C. § 112, second paragraph. Accordingly, each of these rejections is moot. Reconsideration and withdrawal thereof is respectfully requested.

Issues under 35 U.S.C. § 102(e)

The Examiner has rejected claims 63, 66-69, 71-74, 77-83, and 85-87 under 35 U.S.C. § 102(e) as being inherently anticipated by Beutel et al., USP 5,967,813. Applicants respectfully traverse this rejection.

Applicants note that the subject matter of claims 70 and 84, relating to the specific structure of the porous membrane have not been rejected as being anticipated by Beutel '813. Accordingly, since each of the independent claims has been amended to recite this subject matter, this rejection is moot. Reconsideration and withdrawal thereof are respectfully requested.

Issues under 35 U.S.C. § 103(a)

The Examiner has rejected claims 70 and 84 under 35 U.S.C. § 103(a) as being obvious over Beutel '813. Applicants respectfully traverse this rejection.

The Examiner points out that Beutel '813 differs from the present invention in failing to disclose that the porous membrane is constructed of a non-absorbent material with pores of regular

Appl. No. 09/227,518

and defined diameter which traverse the membrane directly from the upper to the lower side. Regardless, the Examiner asserts that by way of Applicants disclosure at page 13, it would have been obvious to utilize such a membrane. The Examiner asserts that the specification discloses that these porous membranes, as defined in either of claims 70 and 84, were well known, conventional and commercially available. Thus, it would have been allegedly obvious for one of ordinary skill in the art to substitute these membranes for the porous membrane of Beutel '813.

Applicants respectfully disagree with the Examiner's rationale. Applicants submit that the standard for providing motivation in a rejection under 35 U.S.C. § 103(a) is not whether or not the difference between the primary reference and the claimed invention relates to a material which is well known, conventional and commercially available. The mere statement that the porous membranes are well known, conventional, and commercially available is not enough to provide a *prima facie* case of obviousness under 35 U.S.C. § 103(a). The references must provide some type of motivation to utilize such a membrane, and absent such motivation, the Examiner has not correctly placed a rejection under 35 U.S.C. § 103(a).

Additionally, Applicants assert that the Examiner's characterization of the membranes as being well known, conventional

Appl. No. 09/227,518

and commercially available is incorrect. In fact, at page 13, lines 15-16 of the present specification, it is stated that "A variety of membranes of different thicknesses, material, and pore densities are commercially available from a number of manufacturers." This is just a statement of facts. However, there is not statement about whether they are "well known" or "conventional". They are simply commercially available.

Even so, if these membranes were well known, it would have simply been in the art of filtering. Membranes constructed of non-absorbent material with pores of regular and defined diameter which traverse the membrane directly from the upper to the lower side may be used for filtering. As opposed to traditional filtering material, these membranes are excellent for accurate fractionation of particulates due to the precise pore size and distribution. However, this bears no relation to the class of invention currently claimed.

One of ordinary skill in the technical field of drug screening, would have no means of realizing that this type of porous membranes would have particular advantages in a method for exposing an array of test compounds to a detector layer of physiologically viable cells. The realization that the precise pore size and distribution of these membranes also provides them with a property of orthogonal capillarity and that this feature is

Appl. No. 09/227,518

useful to limit lateral spread of test compounds applied to the membranes to discrete spots of liquid (page 13, lines 12-15) is completely non-obvious to one of ordinary skill in the technical field of drug screening.

However, additional distinctions exist. The membranes relied on in Beutel '813 are all isotropic membranes. That is, these are membranes with pores in all directions. Such membranes will have an even spread of fluid throughout the material, and in all directions. In contrast, the membranes of the present claims are anisotropic membranes. Such membranes only have pores in one dimension and will, in the present invention, direct the fluid from the top to the bottom. It is clear from the reading of Beutel '813, column 5, lines 35-38, that their format separates the test compounds by diffusion rather by an impenetrable barrier, and that eventually the compounds will run together. As opposed thereto, the present invention uses a impenetrable barrier.

In summary, the Examiner's rejection does not include the requisite amount of motivation to utilize the presently claimed membranes. Absent such motivation, the mere fact that these membranes may have been commercially available is not enough to render the present claims *prima facie* obvious. Secondly, Beutel '813 utilizes isotropic membranes. This amounts to a negative teaching which rejects substituting the present membrane for the



Appl. No. 09/227,518

membrane of Beutel '813. In fact, one of ordinary skill in the art looking to solve problems disclosed by Beutel '813 would not modify Beutel '813 as suggested by the Examiner, since this would destroy the teaching of the reference. Beutel '813 specifically selects this type of isotropic membrane. Accordingly, utilizing the present anisotropic membrane would destroy the purpose of the Beutel '813 reference. Where the Examiner's proposed modification would render the prior art version unsatisfactory for its intended purpose, the proposed combination is improper. In re Gordon, 733 F.2d 980, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984); see also Ex parte Rosenfeld, 130 USPQ 113 (POBA 1961).

Accordingly, Applicants respectfully submit that the present Examiner has failed to present a valid *prima facie* case obviousness. Reconsideration and withdrawal of all outstanding rejections is respectfully requested.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Craig A. McRobbie (Reg. No. 42,874) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.


If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any

Appl. No. 09/227,518

overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By  #42574  
for Leonard R. Svensson, #30,330

LRS/CAM/jmb  
3759-0113P

P.O. Box 747  
Falls Church, VA 22040-0747  
(703) 205-8000